

ABSTRACT

A flat display panel (MPDP) of the emissive plasma pixel element type for scanned television image reproduction is disclosed yielding bright, efficient and rugged displays for TV applications by use of MEMS and VLSI technology for fabrication. The invention takes a complete system approach towards designing a high efficiency television display of the mini type for portable applications. A main objective of the present invention is to overcome problems inherent in X-Y matrix scanning of the picture elements in a flat display screen. A simplified addressing method eliminates the need for conventional X-Y matrix addressing of 1200 conductors. By means of the invention a gaseous electric discharge causes a visible light pixel to move progressively and recurrently along a series of adjacent electrodes by application of voltage impulses so as to achieve interlaced scanning. Improved construction technology to achieve very small pixel elements is a feature of the inventive structure. This is particularly advantageous for HDTV applications where pixel sizes need to be small (20 μ m) for a MPDP. Another major advantage of the construction is that sealed cavities allow more than one atmosphere gas pressure providing substantially improved light emission. This significantly improves the brightness of MPDP displays and enables improved projection displays as well a useful scanned high intensity micro-lamp rear lighting illumination for conventional LED flat screen display devices.